

MISSOURI CONSERVATIONIST

VOLUME 79, ISSUE 1, JANUARY 2018
SERVING NATURE & YOU



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Serving Nature and You: Fiscal
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MISSOURI CONSERVATIONIST



ON THE COVER

Fern frost patterns
on windows on cold
winter nights.

NOPPADOL PAOTHONG

100mm macro lens,
f/16, 1/80 sec, ISO 800

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Inbox



Letters to the Editor

Submissions reflect readers' opinions and may be edited for length and clarity. Email Magazine@mdc.mo.gov or write to us:

MISSOURI
CONSERVATIONIST
PO BOX 180
JEFFERSON CITY, MO 65102



LOVE FOR I AM CONSERVATION

Thanks for the feature on Tom Love and his kindness to our disabled veterans [November, Page 8]. May God bless him. Good man.

Rich Murray
Mehlville

UP FRONT

Your article [November, Page 3] in the latest *Conservationist* stirred up a lot of memories for me. In the early 1970s, I was involved in the catfish harvest at Lake Paho in northern Missouri. At that time, all the stocker catfish for the state were raised there. I was the hatchery manager at Indian Trail Hatchery. It was a long drive to Lake Paho from Indian Trail, and an even longer drive with a load of catfish from Paho to the Bootheel and back.

At that time, fisheries had no radios and cell phones had not yet been invented. As you mentioned, there was no GPS, Google Earth, etc. Sometimes we drove for more than 18 hours to deliver our fish. Thanks for stirring up some memories and best of luck to you and the department!

Danny Marshall via email

Thanks for your *Up Front* columns. I look forward to reading it each month, and I'm never disappointed. I know that MDC is in the best hands, and will be for a long time to come.

William Forster via email

THE MILKWEED EFFECT

After reading Matt Seek's article in the September issue [*The Butterfly Effect*, Page 10], I decided to try to find some milkweed seeds to plant. We live on 17 acres in north Missouri and it took a while to find these seeds. After reading the article, it has made me want to plant these milkweed seeds and hopefully see a butterfly take its first flight! Wish me luck! Thanks for your great magazine.

LeAnn Lunsford via email

We loved the September article about the monarchs so much that we ordered milkweed and are making that a priority in our garden now.

Jacquelyn Sanger St. Joseph



KUDOS TO MDC AGENTS

I would just like to thank MDC and the outstanding job your agents do. I have had a lot of positive experiences with the department. This year, my children and I were selected for a managed hunt. My daughter just took her hunter safety course this past week and really enjoyed the class. She learned so much more than I am capable of teaching her. I would also like to recognize Conservation Agent Zachary White, assigned to Clinton County. I have had amazing experiences with him and the job he does. He is very friendly and to the point. He is knowledgeable on the *Wildlife Code of Missouri* and advised me that I could call him anytime, day or night, with questions or concerns. I would also like to make mention of the conservation agents who taught the hunter safety course on Oct. 7 in Platte City. It is all these employees of MDC that make it so great. Thank you for the job you do.

Kevin Henderson Smithville

FUN FOR THE WHOLE FAMILY

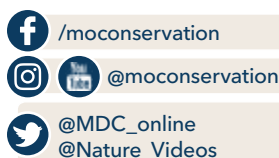
I have been a happy subscriber for many years, and I am very impressed with your new version of the *Conservationist*. Its articles and beautiful photographs are priceless, and my granddaughter, who is 11, never misses a chance to guess the month's natural wonder, *What Is It?* And to my surprise, she gets it right most of the time! Thank you all who make this possible for us to enjoy.

Alicia Cornelius Manchester

CORRECTION

On Page 19 of the October issue [*Taking it to the Limit*] we stated the headwaters of the Missouri and Mississippi rivers start in Montana. The Missouri starts in Montana; the Mississippi starts in Minnesota.

Connect With Us!



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Have a Question for a Commissioner?

Send a note using our online contact form at mdc.mo.gov/commissioners.



Want to see your photos in the Missouri Conservationist?

Share your photos on Flickr at
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email Readerphoto@mdc.mo.gov,
or include the hashtag #mdcdiscovernature
on your Instagram photos.



1

1 | Winter short
leaf pines by
Mike Conley,
via Flickr

2 | Eagle skirmish
by **Jennifer
Tullos**, via email

3 | River otters by
thewaterfactor,
via Instagram



2



3

MISSOURI CONSERVATION COMMISSIONERS



Don
Bedell



Marilynn
Bradford



David
Murphy



Nicole
Wood



Up Front

with Sara Parker Pauley

✱ At my Granny Elma's house, there was a front porch and a back porch, each with a specific purpose. The front porch was for watching the sunrise while drinking coffee or sipping sweet tea on a hot afternoon. The back porch was grand central station for all the "real work" that was happening. My granny, on her way to milk the cows or tend to the chickens, would traverse through the back porch.

Where would you find the milk buckets? Back porch. Need a flat to pick beans? Back porch. Extra jars for canning? Back porch. Now, if you made the mistake of taking a moment to visit, throw a football, or tie your shoe in the general vicinity of the back porch, Granny would give you that look that said either get those idle hands working or take them to the front porch. There is work to be done here!

In this issue, we are taking a moment to review all the diverse and important work that has been accomplished this past year, including celebrating our 80th anniversary. You'll read about the breadth of conservation efforts accomplished or underway, the partners helping us make it happen, and an overview of the financial resources necessary to get the work done.

This reflection of work is important to ensure Missourians are informed about the work their Department of Conservation, with the help of many great partners, is accomplishing for them. We also look forward to 2018 and the wonderful opportunities ahead. We're reinvigorated and ready. There is work to be done here!

Sara Parker Pauley

SARA PARKER PAULEY, DIRECTOR
SARA.PAULEY@MDC.MO.GOV

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Printed with soy ink



mdc.mo.gov 3

Nature LAB

by Bonnie Chasteen

Each month, we highlight research MDC uses to improve fish, forest, and wildlife management.

FISHERIES MANAGEMENT

Grotto Sculpin Population Study

✱ “Being in a cave is like entering a different world,” Sindupa De Silva said. His coworker, Wesley Sleeper, agrees. “Caves are full of sights and organisms that simply cannot be seen above ground.”

These two MDC research assistants don’t explore caves just for fun. They’re part of the team collecting information for the state’s grotto sculpin population study. Grotto sculpins are small, cave-dwelling fish that occur in five cave systems and two surface streams in Perry County.

“We study the numbers and sizes of the sculpin in different caves,” De Silva said. “Then we observe any trends in the numbers and sizes over seasons and years and look for any changes in the environment, such as the water quality and sediment.”

This information is valuable in helping biologists recommend management choices that can protect the species. For example, cleaning up sinkholes that lead to caves where the fish live can improve their habitat because sinkholes supply water to cave streams and groundwater sources.

Jason Crites is the MDC fisheries management biologist who leads the grotto sculpin research team. He explained how the team’s research will help MDC better manage cave habitat and water quality.

“Changes in wildlife populations below ground can be an indicator of big changes above ground,”



MDC has researched grotto sculpin for over a decade, but the current research project is focused on assessing population numbers and status, which includes reproduction.

MDC researchers go underground to better understand and conserve endangered cave fish

Crites said. “Understanding the grotto sculpin’s specific habitat needs and tracking its population can help us improve stewardship of surface lands. This, in turn, helps us protect groundwater quality, which impacts us all.”

The study will end in May 2019. The team is considering further research to explore other questions about the species.



Grotto Sculpins at a Glance



Range
Perry County

Ecological Value

Environmental indicator. A strong population indicates clean water.

Threats

Pollution from trash, chemicals, and runoff.

Population

Current data indicate a stable population.

Safeguards

Sinkhole clean-ups, stream buffers, and careful construction.

MDC research assistant
Sindupa De Silva

Browse more research projects at research.mdc.mo.gov

In Brief

News and updates from MDC



Discover nature
through hunting.
Buy your permits
today.

BUY YOUR 2018 HUNTING AND FISHING PERMITS

ANNUAL PERMITS
EXPIRE AT THE END
OF FEBRUARY

➔ MDC reminds Missouri hunters and anglers that annual permits expire at the end of February. These include 2017 permits for small game, fishing, trout fishing, and combination hunting and fishing.

Buy Missouri hunting and fishing permits from vendors around the state, online at mdc.mo.gov/buypermits, or through MDC's free mobile apps, MO Hunting and MO Fishing. These are available for download through Google Play for Android devices or the App Store for Apple devices.

Save time by buying hunting and fishing permits for multiple people in a single transaction. Select the "Additional Customer" option during the permit purchase.

Commercial permits and lifetime permits can be purchased only through the MDC Permit Services Unit by calling 573-522-0107 for an application.

GIVE A HOLIDAY GIFT BACK TO NATURE

Forestry staff reminds you not to throw out your cut Christmas tree after the holidays. Recycle it! Many communities have Christmas tree recycling programs. If not, there are several creative ways to make further use of your tree.

Place the undecorated tree in the backyard near your bird feeder to provide refuge for birds or along a shrubby edge to offer cover for other wildlife or springtime nesting opportunities. Add some post-holiday treats as ornaments by coating pinecones with peanut butter and sprinkling them with birdseed.

Have your tree shredded or chipped for mulch, or place cut branches over dormant plants to provide a bit of insulation during the winter and to add organic matter as the needles fall.

You can also sink the tree in a pond to provide fish a place to rest, nest, and escape predators. Multiple live trees make the best cover so work with friends, family, and neighbors to combine efforts. Anchor the trees with concrete blocks and sink them at a depth of about 8 feet with the trees placed in a row.

If you used a balled-and-burlapped live evergreen this holiday season and the ground is still soft enough to dig, add it to your home landscape for years of enjoyment and wildlife cover.



Sinking an old Christmas tree in a pond provides fish places to rest, nest, and escape predators.



Got a Question for Ask MDC?

Send it to AskMDC@mdc.mo.gov or call 573-522-4115, ext. 3848.

Q: We've had a cardinal flying into our windows for several years. We've put chimes in the trees and hung silver strings of beads. Nothing works and he's banging the heck out of his head. How can we get him to go somewhere else?

➔ It sounds like you are seeing some combative behavior, which happens when male Northern cardinals defend their turf from other males. The bird perceives his mirror image as another male and works to remove the offender from the area. Females do this, too, to defend nesting sites in the breeding season.

The best way to prevent this behavior is to break up the window's reflection, or shroud it, until the bird moves on. Shiny things aren't scaring the bird away; he can still see his "competitor's" reflection. Instead, try to make the window opaque with soap streaks, tape, screens, fabric, decals, netting, newspaper, one-way transparent film, etc. For more advice on how to limit this behavior, visit allaboutbirds.org/why-birds-hit-windows-and-how-you-can-help-prevent-it.



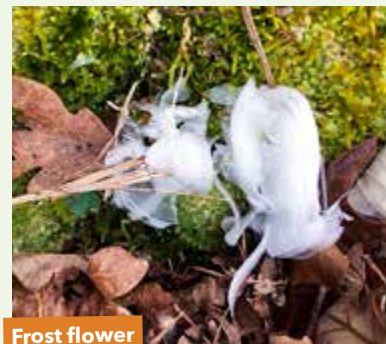
Q: What butterfly is this?

➔ This butterfly is the species *Polygonia interrogationis*, commonly known as the **question mark butterfly**. It is a close relative of the eastern comma and gray comma butterflies (*Polygonia comma* and *Polygonia progne*).

While many butterflies overwinter as larvae or pupae, these *Polygonia* species spend the winter as adults. Watch for these beauties flying on warm winter afternoons. Question mark and comma butterflies have similar life cycles, featuring two broods

Q: I recently saw several of these ice flowers on a hike. What are they called and how do they form?

➔ You came across some delightful examples of frost flowers. This happens when water freezes in the stem of a plant, such as crownbeard or dittany. Because water expands when it freezes, it is extruded from the stem in these beautiful, curled ribbons.



Frost flower



Eastern comma butterfly



Gray comma butterfly

per year. Notably, the butterflies are much darker in the summer than in the winter, when their brighter colors enliven winter's dull landscape.

All three of these *Polygonia* species are brownish-orange with dark spots. One way to tell the difference between question mark butterflies (also known as violet tips) and comma butterflies (sometimes called hop merchants) is to count the spots on their front wings. Comma butterflies have a row of three spots on their upper wings, while question mark butterflies have a fourth spot.

Another way to identify the species is to examine the undersides of their hind wings. Each question mark butterfly has a tiny, silver, sideways question mark. Comma butterflies are punctuated by a C-shape. Gray commas are named for the dark gray bark-like striations on their undersides.

Folded up, all three butterflies blend into the leaf litter of the woodland floor. Question mark and comma butterflies are drawn to tree sap, decaying fruit, animal droppings, carrion, and mud puddles. Only occasionally do these species seek out flower nectar.

What IS it?

Can you guess this month's natural wonder?

The answer is on Page 9.



AGENT ADVICE

from

Dave Carlisle

BUCHANAN COUNTY
CONSERVATION AGENT

With the new year often comes new year's resolutions — promises to get more exercise or take up a new hobby. Hunting antler sheds combines both and helps you discover nature in the process. It's a great activity for the whole family, and all you need is the power of keen observation. You don't need a permit to participate or keep your harvest. But if you find antlers still attached to a skull, you must report your discovery within 24 hours and obtain a wildlife disposition from your local conservation agent. Be sure and have your agent's phone number handy for just such instances. You can find it at short.mdc.mo.gov/ZoF.

Happy hunting!



I AM CONSERVATION

Jim Wiggs

➔ Jim Wiggs enjoys working with MDC Fisheries Management Biologist Blake Stephens to offer fish gigging clinics for youth on his property, which lies along the Warm Fork of the Spring River in Oregon County.

A Great Ambassador for Conservation

"Jim invests a lot of time each year in getting his property ready to receive first-time giggers and their families," Stephens said. "He is a great ambassador for conservation." Over the last two years, Wiggs has hosted nearly 100 people, including kids, families, and volunteers, some from as far away as Kansas City. Wiggs and Stephens plan to offer another clinic in 2018.

In His Own Words

"We've got to pass it on. If we don't pass it on, it's going to be lost," he said. "The kids that come, a lot of them have never done anything like this. One little girl who gigged her first fish, she just came unglued. The kids have a blast."

Jim Wiggs (far right) shares his love of the outdoors with family and friends.



by David Stonner

MDC ENCOURAGES SCHOOLS TO FIGHT LITTER

MDC and the Missouri Department of Transportation (MoDOT) invite Missouri public, private, and home-school students in grades K-8 to participate in the 2018 "Yes You CAN Make Missouri Litter-Free" trash can decorating contest. The annual contest is sponsored by MDC and MoDOT as part of the state's "No MORE Trash!" statewide litter campaign.

The contest encourages school classes and groups to join in the fight against litter by decorating and displaying a large trash can with the "No MORE Trash!" logo and a litter-prevention message using a variety of creative media. Schools may submit one entry in each competition category: K-2, 3-5, and 6-8. Entries are judged based on creativity, adherence to contest rules, and effective use of theme and logo.

First-place winners from each competition category receive \$200 awarded to the sponsoring schools. All first-place winners are then eligible for a grand prize of a trophy and \$600 awarded to the sponsoring school.

There is no entry fee for the contest. Participating school groups must submit a completed entry form online with up to three photos to nomoretrash.org by March 16. Contest rules, entry forms, logo, past contest entries and winners, and educational information can also be found at nomoretrash.org.



PreK-1 students at Cowgill Elementary won the K-2 category and grand prize for their 2017 entry, "Oscar will be your fan if you keep it in the can!!" The school received a check for \$200 for the category win, and a check for \$600 and a trophy for the grand prize of the 2017 NoMORE Trash! contest.

What IS it?

NORTHERN FLICKER

A member of the woodpecker family, the northern flicker (*Colaptes auratus*) delights bird-watchers at feeders, particularly when suet is on the menu. Flickers excavate the ground for insects, especially ants. In fact, northern flickers consume more ants than any other bird. They need dead wood – standing or on the ground – for nesting and foraging. Without it, their population declines significantly.

Photograph by Noppadol Paothong



STILL TIME TO DISCOVER NATURE THROUGH EAGLE DAYS

Missouri's winter eagle watching is spectacular, and there are still plenty of opportunities to discover nature through Eagle Days events around the state.

MDC Eagle Days events include live captive-eagle programs, exhibits, activities, videos, and guides with spotting scopes. Watch for eagles perched in large trees along the water's edge. View them early in the morning to see eagles flying and fishing. Be sure to dress for winter weather and don't forget cameras and binoculars.

- **Kansas City:** Jan. 6 from 9 a.m. to 3:30 p.m. and Jan. 7 from 10:30 a.m. to 3:30 p.m. at Smithville Lake Paradise Pointe Golf Course Clubhouse. Call 816-532-0174 for more information.
- **St. Louis:** Jan. 13 and 14 from 9 a.m. to 3 p.m. at the Old Chain of Rocks Bridge, south of I-270 off Riverview Drive. Call 314-877-6014 for more information.
- **Springfield:** Jan. 20 from 9 a.m. to 4 p.m. and Jan. 21 from 12:30 to 4:30 p.m. at Springfield Conservation Nature Center. Call 417-888-4237 for more information.
- **Jefferson City:** Jan. 27 from 10 a.m. to 3 p.m. at Runge Conservation Nature Center. Call 573-526-5544 for more information.
- **Clarksville:** Jan. 27 from 9 a.m. to 4 p.m. and Jan. 28 from 10 a.m. to 3 p.m. at Lock and Dam 24 and Apple Shed Theater. Call 660-785-2420 for more information.
- **Schell City:** Feb. 3 from 9 a.m. to 3 p.m. at Schell City Community Center and Schell-Osage Conservation Area. Call 417-876-5226 for more information.

Can't make an Eagle Days event? Other hot spots for winter eagle viewing on your own include the following:

- Lake of the Ozarks at Bagnell Dam Access, east of Bagnell
- Eagle Bluffs Conservation Area on Route K, southwest of Columbia
- Lock & Dam 20, Canton
- Lock & Dam 24 at Clarksville
- Lock & Dam 25, east of Winfield
- Mingo National Wildlife Refuge, northwest of Puxico
- Old Chain of Rocks Bridge, south of I-270, off of Riverview Drive, St. Louis
- Riverlands Environmental Demonstration Area, east of West Alton
- Schell-Osage Conservation Area, north of El Dorado Springs
- Smithville Lake, north of Kansas City
- Loess Bluffs National Wildlife Refuge, south of Mound City
- Stella at Moses Eagle Park
- Swan Lake National Wildlife Refuge, south of Sumner
- Table Rock Lake and Shepherd of the Hills Fish Hatchery, southwest of Branson
- Truman Reservoir, west of Warsaw

For more information, visit mdc.mo.gov/EagleDays.



WINTER TROUT HARVEST BEGINS FEB. 1

Beginning last November, MDC fisheries staff stocked more than 75,000 rainbow trout in more than 32 urban area lakes around the state for winter trout fishing. Many of these areas allow anglers to harvest trout as soon as they are stocked, while other areas are catch-and-release until Feb. 1. To find locations near you, visit short.mdc.mo.gov/ZoH.

Beginning Feb. 1, all urban area lakes allow the harvest of trout. The daily limit is four trout with no length limit. All Missouri residents older than 15 and younger than 65 must have a fishing permit. All nonresidents over 15 must have a fishing permit. To keep trout, all anglers regardless of age must have a Missouri trout permit. Learn more about trout fishing at short.mdc.mo.gov/Z5r.



St. Louis area anglers catch trout in the heart of the city.

SERVING NATURE AND YOU



Prairie-chickens at
The Nature Conservancy's
Dunn Ranch
NOPPADOL PAOTHONG



Annual **REVIEW**

FISCAL YEAR JULY 1, 2016-JUNE 30, 2017

On a regular basis and in many ways,

Missourians

make it clear they have a strong desire to protect and enhance our fish, forest, and wildlife resources. Whether it be in surveys, through participation in MDC events, visits to our conservation areas, or support of the revenue sources that fund MDC's work, Missourians show how much they value these resources.

And in return, MDC values that support. One way we show this appreciation is by maintaining an open and active line of communication with Missourians, and this annual review is one small, but important, tool in that effort. In the pages that follow, you will see the things most expect of an annual review – budget information, receipts, disbursements, etc. – but you will also see updates on the issues, challenges, and successes that highlight MDC's year from July 1, 2016, through June 30, 2017.

Of course, nature doesn't function on a fiscal year, and many of the projects MDC undertakes are years – even decades – in the process, so you'll see familiar issues highlighted, such as chronic wasting disease and feral hogs, and successes, such as the continued growth of the state's elk herd and black bear population.

Since MDC's founding 80 years ago, its greatest successes have all sprung from its greatest challenges, and with the continued support of Missourians, we will continue to see success in protecting and enhancing our outdoor fortune for future generations.



Operating BUDGET

Missouri State Operating Budget

MDC represents less than 1 percent of the total state budget and **receives no state general revenue.**



TOTAL MISSOURI OPERATING BUDGET FOR FISCAL YEAR 2017

\$27,258,127,633

Health and Social Services

46.1%

Education

26.5%

Government Services

15.1%

Transportation

8.0%

Natural & Economic Resources

3.7%

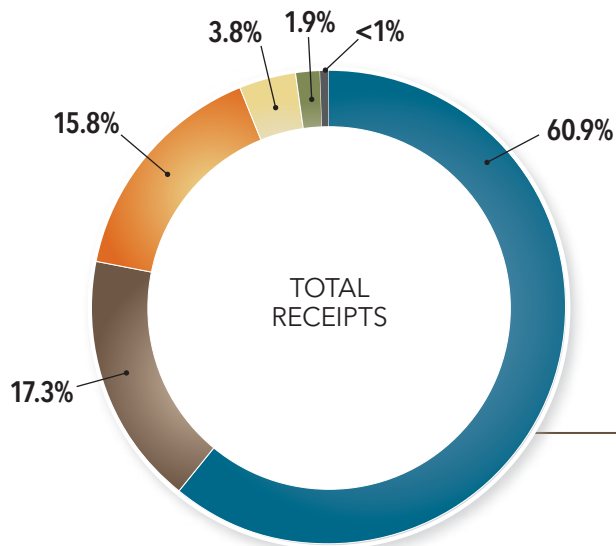
Conservation

0.6%





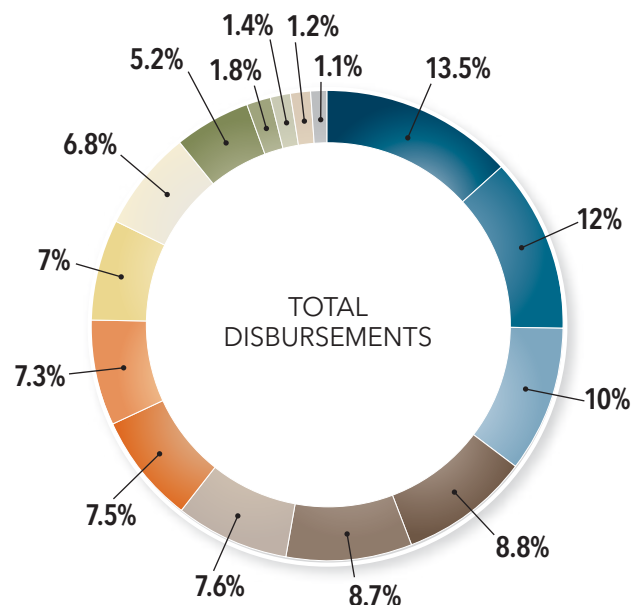
The Lewis Family, Dean, Anna Mae and David D. Lewis Memorial Conservation Area



MDC Receipts

MDC gets the majority of its funding through the **conservation sales tax**. For every \$8 spent on taxable items, one penny goes to conservation.

Conservation Sales Tax	\$117,077,413
Permit Sales	\$33,332,175
Federal Reimbursements	\$30,389,196
Sales and Rentals	\$7,334,881
Other Sources	\$3,728,665
Interest	\$497,741



MDC Disbursements

Funds are distributed throughout the divisions to accomplish the **top conservation priorities** across the state for MDC.

Capital Improvements	\$26,269,855
Wildlife	\$23,321,122
Forestry	\$19,484,706
Protection	\$17,114,454
Outreach and Education	\$16,934,745
Fisheries	\$14,713,215
Information Technology	\$14,569,544
Resource Science	\$14,144,548
Administrative Services	\$13,580,911
Design and Development	\$13,145,556
Private Land Services	\$10,072,100
Administration	\$3,536,712
Human Resources	\$2,732,923
Regional Public Contact Offices	\$2,285,273
County Assistance Payments	\$2,170,846

NOTE: Disbursements include capital improvements, retirement benefits, and other agency costs that are not appropriated in the MDC operating budget.

Sustaining and Improving FISH, FOREST, AND WILDLIFE RESOURCES

Identifying, Slowing the Spread of Chronic Wasting Disease

In an effort to track and slow the spread of chronic wasting disease (CWD), a degenerative brain disease that threatens Missouri's white-tailed deer herd, MDC conducted its first mandatory CWD sampling of all deer harvested during opening weekend of the 2016 firearms season within a 29-county management zone.

As a result of the more than 25,500 samples taken during the 2016–2017 sampling season, including 19,200 samples collected at MDC's 75 sampling stations during opening weekend, researchers were able to identify nine new cases of CWD, including cases in Jefferson and St. Clair counties, where the condition had not been seen previously.

In response to the 2016–2017 sampling results, and because of the detection of CWD in hundreds of deer in northwest Arkansas near the Missouri border, MDC expanded the CWD Management Zone from 29 to 41 counties. Hunters in 25 of those counties were again required to present their harvest for sampling during opening weekend of the 2017 firearms deer season.



"While we did detect CWD in a few new areas of the state, including Jefferson and St. Clair counties, the fact that we found a low number of positives is great news and indicates CWD remains relatively rare in Missouri."

*– Jasmine Batten, MDC
wildlife disease coordinator*



MDC staff take a sample from a harvested deer at a CWD station.

Elk Herd Continues Growth

Missouri's elk herd, which is the result of an MDC reintroduction effort, continues its steady growth, according to research conducted by MDC and the universities of Missouri and Montana.

Researchers captured 57 elk, including 17 bulls, 38 cows, and two calves, on MDC and National Park Service lands in Carter, Shannon, and Reynolds counties as part of an ongoing monitoring program to determine the herd's overall health, growth, and mobility. The study found 91 percent of the adult cows and 50 percent of the yearling cows to be pregnant, which is a good indicator of continued herd growth. MDC estimates Missouri's elk population at 180–185.

White-tailed deer



Feral Hog Eradication Effort Sees Success Through Partnership

A growing group of conservation and agricultural organizations have allied themselves with MDC in the ongoing effort to eradicate the invasive and destructive feral hog population from Missouri's landscape.

Buoyed by a grant from the Missouri Conservation Heritage Foundation, MDC equipped the state's feral hog strike team with additional trapping equipment and resources to educate the public about the dangers posed by and damage done by feral hogs.

MDC has focused its efforts on large-scale traps capable of capturing entire sounders, or groups of hogs. The results of the trapping have been promising, as the recorded numbers of hogs trapped and killed has increased significantly over previous years.

Feral hogs are not wildlife and are a serious threat to Missouri's fish, forest, and wildlife resources, as well as to agricultural resources.

"We've built significantly on our progress from 2016. We continue to engage private landowners and partners in efforts to report hog sightings, continue trapping, and deter hog hunting and the illegal release of hogs, and that's why we're seeing growing success."

— Alan Leary, wildlife management coordinator

"The population is growing slowly and is showing signs of increased calf production. The next couple of years will be exciting ones for elk in Missouri."

— Aaron Hildreth, cervid biologist



Elk

Black Bear Study Continues

Once nearly wiped out of Missouri, the black bear has made a comeback over the past several decades, and MDC is making a concerted, long-term commitment to tracking and understanding the size and health of the state's black bear population.

Black bear



In February and March 2017, MDC's furbearer program visited 15 black bear dens to determine the reproductive status of sows. The team successfully handled six litters, weighing, measuring, and tagging the cubs and yearlings, and observed from a distance the young of those dens where researchers could not handle the animals to get more precise information.

The winter black bear den visits allow researchers to track how many cubs survive from year to year, an important element in determining the growth rate of Missouri's bear population.

Elk Tourism Boosts Economy

Areas near Missouri's elk restoration zone in the state's south-central region have seen an economic boost of nearly \$1.3 million tied to the reintroduction of elk to the area, according to a study conducted by MDC.

Based on 800 visitor surveys, it was estimated that over 22,000 visits were made to the area in 2016. Researchers determined that 89 percent of the visitors to Peck Ranch Conservation Area and 27 percent of visitors to Current River Conservation Area were there specifically to view elk.



Bald eagle

Bald Eagle Survey

The removal of the bald eagle from the threatened and endangered species list is considered a triumph of American conservation efforts, but there is still work to do to track the bald eagle's recovery throughout its range.

MDC, working with the monitoring plan developed by the U.S. Fish and Wildlife Service, conducted a modified eagle survey in early 2017 to determine the progress of the bald eagle breeding population in Missouri. This additional effort allowed researchers to check eagle nests that had not been surveyed in several years.

Missouri Natural Areas System Celebrates 40th Anniversary

While some people dread their 40th birthday, MDC celebrated the 40th anniversary of the Missouri Natural Areas System in 2017.

The natural areas system, established in 1977 in partnership with the Missouri Department of Natural Resources (DNR), was created to identify and preserve the last and best examples of the state's prairies, forests, woodlands, savannas, glades, wetlands, and caves.

The system, which has grown to include 188 special areas totaling 87,222 acres of land and water, represents key pieces of Missouri's natural heritage. It is now recognized by a partnership, the Missouri Natural Areas Committee, consisting of its original members — MDC and DNR — along with the Mark Twain National Forest, U.S. Fish and Wildlife Service, Ozark National Scenic Riverways, and The Nature Conservancy.



Sedge wren



Eastern hellbender larva



Pallid sturgeon

Missouri River Field Station Helps Endangered Pallid Sturgeon

More than 100 volunteers, working with MDC from the Missouri River Field Station, caught 62 pallid sturgeon as part of an ongoing program to replenish the population of the endangered fish.

Of the 62 pallid sturgeon caught, five were sent to state and federal hatcheries for use as brood stock. The offspring of these adults will be stocked back into the Missouri River after they reach a year old. Over the course of the nine-year program, 86 adult pallid sturgeon have been sent to hatcheries, resulting in the production of 81,375 pallid sturgeon for restocking in the river.

Eastern hellbender



Least bittern

MDC Studies Marsh Bird Habitat, Migration

MDC completed two studies in 2016 investigating the habitat needs and migration patterns of migratory water birds, including rails and bitterns.

The first study, which looked at 107 publicly owned wetlands across the state, determined that MDC's wetland management activities are providing for the needs of spring migrating and nesting rails and bitterns. Such species are dependent on emergent marsh habitat, such as cattails and bulrushes.

The second study looked at the timing of the fall migration of different varieties of rails. Identifying a species' migration pattern is important so management activities can be timed to provide the birds with the best possible habitats when they are needed most.

Combined, the results of the two studies provide wetland managers a better understanding of these migratory marsh birds, allowing managers to tailor their wetland management strategies to better meet the species' needs.

Projects Track Deer Movement, Survival

MDC is continuing two studies using satellite technology to track white-tailed deer movement in southeast, northwest, and Ozark regions of Missouri.

In the southeast Missouri counties of Bollinger, Cape Girardeau, Stoddard, and Wayne, MDC is using GPS collars to track deer movement in agricultural areas. The project is aimed at developing strategies for minimizing crop damage from deer.

Meanwhile, in the glaciated plains of north Missouri and in the Ozark mountains of south Missouri, MDC is working with the University of Missouri to determine the survival rates and movement of deer in these contrasting landscapes.



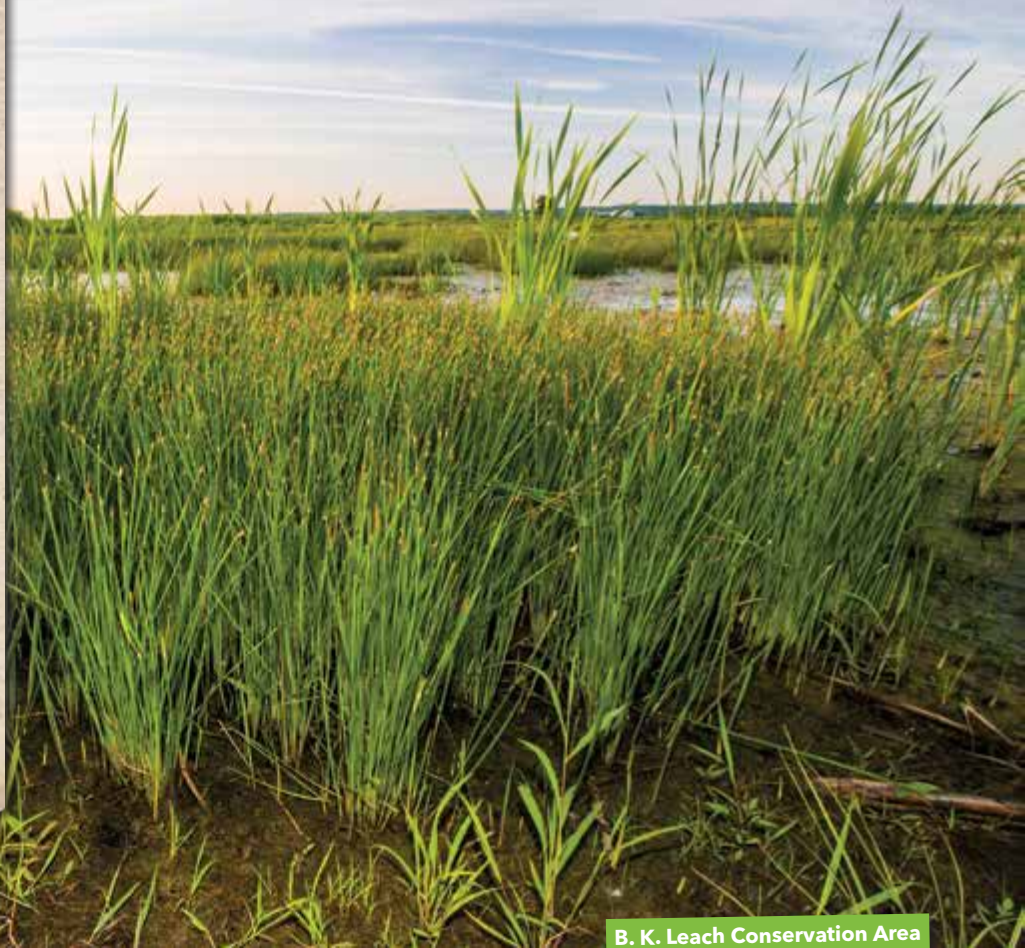
White-tailed deer



Study Confirms Positive Results of Wetlands Restoration Program

A study using satellite imagery and aerial surveys has confirmed an increase in the amount and quality of wetland habitats, which are vital to migrating waterfowl.

The six-year study, funded by MDC, compared publicly and privately owned wetlands restored through the Wetland Reserve Easement Program to natural wetland habitats in the floodplains of the Missouri and Grand rivers. The study found 60 percent of the restored wetlands had water on them during the fall waterfowl migration, compared to 30 percent of the natural wetlands that still had water on them during the same time.




B. K. Leach Conservation Area

Forest Products Industry Contributes \$9.9 Billion to Economy

Missouri's timber products industry contributes \$9.9 billion annually to the state's economy, according to an MDC study.

MDC analysts, working with data from Missouri wood producers and federal economic databases, found that over 132.1 million cubic feet of wood was harvested from forests in 2015, the most recent data available. This harvest supported nearly 47,000 jobs with a total payroll over \$2.3 billion.



In FY17, MDC Fisheries Division staff responded to 2,319 requests for watershed, floodplain, riparian corridor, stream, or lake management technical assistance.

B. K. LEACH: NOPPADOL PRATHONG

MDC-Owned Forests by the Numbers

MDC manages about **700,000 acres** of forested land in the state. Forest types, by acre, are:



Forest Inventory
(Data collection on tree species, diameter, height, quality, etc.)

23,444 acres

Timber Stand Improvement

(Actions that improve the growth of the best trees in a stand)

2,185 acres

Topeka Shiner Restoration Continues

As part of an ongoing reintroduction program, MDC hatcheries raised 36,626 Topeka shiners for release in northeast Missouri.

Working with the U.S. Fish and Wildlife Service and The Nature Conservancy, MDC released the endangered minnow into three streams and five nursery ponds at Union Ridge Conservation Area, building upon previous stocking in the Spring Creek watershed.

The Topeka shiner, a small minnow that lives in small to midsize prairie streams in the central United States, was designated a federally endangered species in 1998. Populations of the Topeka shiner have steadily declined, and the species now occupies only 15 percent of its former range in Missouri.



Topeka shiner



Greater prairie-chicken

Partnerships Help Restore Prairie-Chicken Populations, Habitats

An interstate partnership of conservation agencies and private landowners has proven successful in expanding the number and range of prairie-chickens in northern Missouri and southern Iowa.

MDC, working with the Iowa Department of Natural Resources, The Nature Conservancy, and the Blank Park Zoo of Des Moines, completed the five-year project to increase the population and genetic diversity of the greater prairie-chicken within the Grand River Grasslands Priority Geography Area, which includes portions of Harrison County, Missouri, and neighboring Ringgold County, Iowa.

In coordination with the Nebraska Game and Parks Commission, project staff captured and relocated 500 prairie-chickens to the Grand River Grasslands. In addition, MDC has worked with private landowners in Harrison County to expand and improve the grasslands, which not only has resulted in an expansion of prairie-chicken habitat, but has increased quail and pheasant populations as well.

Timber Harvest

(Responsibly harvesting trees gives healthiest trees room to grow and promotes wildlife habitat)

6,236 acres

Woodland Restoration

(Actions that restore woodland areas)

5,844 acres

Invasive Plant Control

(Removing or treating invasive plants that disrupt habitat)

6,350 acres

Prescribed Fire

(Carefully controlled fire to encourage plant diversity)

7,007 acres

Connecting Citizens TO FISH, FOREST, AND WILDLIFE RESOURCES



Reeling in New Anglers

Whether by providing knowledge, equipment, or opportunity, MDC continues its efforts to bring the joys of fishing to more Missourians every year.

Through the Discover Nature—Fishing program, MDC staff and volunteers held more than 200 classes, drawing more than 5,200 participants. Working with experienced anglers, participants learned the basics of equipment, skills, fish habits and habitats, and fishing rules and regulations.

For those interested in fishing but who are not ready to invest in the equipment, MDC continues to sponsor the rod and reel loaner program. Prospective anglers can borrow basic fishing equipment from one of 90 locations throughout the state. Loaner locations can be found online at short.mdc.mo.gov/24X.

For those who might be tentative about just grabbing a pole and heading off on their own, MDC, working with sponsors and volunteers, also provided numerous organized fishing events throughout the state. Nearly 11,000 people of all ages and backgrounds participated in more than 160 MDC fishing events.

Archery Program Welcomes 600th School

New Madrid County R-1 Middle School became the 600th school to participate in the Missouri National Archery in the Schools Program (MoNASP). At a ceremony Feb. 3, MDC officials presented the school with a check for \$1,500, and the Missouri Conservation Heritage Foundation presented the school with a \$1,700 check to cover costs of equipment for the program.

MoNASP, which by the end of the past school year was in 628 schools and included nearly 179,000 participants, has been shown to improve school attendance, increase self-esteem, increase physical activity, and encourage youth to pursue more activities outdoors.



"We are thrilled to be recognized as the 600th Missouri school to participate. Our students and their parents are even more excited than the school personnel because it made them feel that they were a part of something really special."

*— Dr. Sam Duncan,
New Madrid R-1 superintendent*



Tree City USA Celebrates 40th Anniversary

MDC celebrated the 40th anniversary of Tree City USA, a nationwide program that recognizes communities that promote the beneficial contributions of trees.

A total of 95 Missouri communities — representing almost 43 percent of the state's population — have earned the Tree City USA designation. In recognition of the program's 40th anniversary, MDC announced a goal of adding 40 new Missouri communities to the Tree City USA program over the next five years.

To earn the Tree City designation, a community must maintain a tree board or department, establish a tree care ordinance, develop a community forestry program, and celebrate Arbor Day each year. Missouri Tree City participants range from Kansas City, with a population of 467,000, to Augusta, with a population of 249 people.

In 2016, Missouri Tree City USA communities invested \$20 million in tree and forest management, including tree inventories, pruning, planting, hazard assessment, education, and planning.



Agents Embody Community Engagement

The community involvement of conservation agents is essential for educating all citizens on the value of healthy fish, forest, and wildlife resources.



5,180 meetings with civic groups, schools, church groups, and other organizations

7,967 radio and TV programs

2,199 news articles published

1,957 public exhibits presented

9 Discover Nature Girls Camps across the state

Volunteers Providing Programs

The work of MDC is multiplied by the dedicated corps of more than 1,800 volunteers statewide who share MDC's passion for protecting Missouri's fish, forest, and wildlife resources.



VOLUNTEERS by the Numbers

124 shooting range volunteers

251 fishing education volunteers

886 hunter/bowhunter education volunteers

426 nature center and interpretive site volunteers

135 protection volunteers

2,700 members of the Missouri Forestkeepers Network



Missouri Stream Teams provide a great service statewide. The program was presented with the Ernest Thompson Seton Award from the Association of Fish and Wildlife Agencies. Stream Team contributions by the numbers:

4,435 Stream Teams statewide

141,712 volunteer hours

1,095 water quality monitoring trips

534 tons of trash removed

7,550 trees planted



Missouri also benefits from the Master Naturalist program.



12 Master Naturalist chapters

67,000 hours of volunteer service in 2016

\$1.75 million economic value



Enhancing OPERATIONAL EXCELLENCE AND SUPERIOR CUSTOMER SERVICE

Managing Public Lands, Assisting Private Landowners

MDC manages more than 900 properties, totaling over 1 million acres statewide, dedicated to restoring and conserving Missouri's fish, forest, and wildlife resources and to providing outdoor opportunities for Missourians. This year, MDC staff worked on habitat management on more than 206,000 acres of public land, including wetland, woodlands, forest, savanna, cropland (through permittee farmers and food plots), grassland prairies, old field, and glades. Every property MDC oversees is operated under a written management plan, and MDC seeks public comment on each of these plans as they are updated. In FY17, staff posted 145 area plans online, seeking public comment.

MDC manages what seems to be a significant amount of property, but the vast majority of land in the state is privately owned. To further MDC's mission, staff works extensively with private landowners. In FY17, staff held or participated in 226 habitat management workshops, field days, and technical training sessions for more than 20,548 private landowners. The workshops focused on a range of habitat management techniques to benefit all wildlife, healthy forests, and clean water. In addition to these group events, MDC provided timely and responsive service to landowners through 20,050 rural and urban contacts, including 7,978 onsite visits. Staff also assisted landowners seeking help with habitat management plans, including writing or reviewing 2,373 habitat management plans during FY17.



MDC Issues Missouri Conservation Permit Card

In April, MDC rolled out the Missouri Conservation Permit Card, a new and convenient way for hunters, anglers, and trappers to carry and show proof of most related permits.

The plastic cards are more durable than paper permits, and updated permit information, such as the purchase of a new permit, is automatically assigned to the cards. Some types of hunting, such as deer and turkey, and some types of fishing, such as trout, require additional permits and tags.

Cardholders can personalize their card by selecting from one of four nature-inspired backgrounds: bass, buck, mallard duck, or bluebird. For more information, visit short.mdc.mo.gov/Z5p.





185,036**
hard-copy
subscribers
(from all 50
states and
22 foreign
countries)

Telling Nature's Stories

Nature communicates in many ways, from the cricket's chirp to the coyote's cry, and MDC has many ways to communicate nature's stories, from traditional print media to the latest social media. In FY17, MDC also began streaming Conservation Commission meetings live on the internet.



524,205**
hard-copy
subscribers (from
all 50 states, two
U.S. territories,
and 28 foreign
countries); 23,534**
online subscribers

Conservation Agents Serving Their Communities

During the record flash flooding events last spring, agents responded to numerous calls for service from local citizens and county officials. To save lives and property, agents in southern Missouri assisted with over 300 swift water rescues and countless evacuation operations.



SOCIAL MEDIA by the Numbers



4.6 million*
unique visitors to
MDC's website



240,982**
Facebook fans



10,800**
Twitter followers



6,128**
Instagram followers



11,420**
YouTube subscribers

9 public channels**

1,861 videos**

11.5 million views**



360,513**
email/text notification
subscribers



51* news and
events articles
monthly (average)



2,500* video
entries on external
web sites (YouTube,
Facebook, etc.)

18 million*
total views



4* MDC Wild
Webcasts on key
conservation topics

* FY17 totals

** As of June 30, 2017

Increasing Citizen Access TO FISH, FOREST, AND WILDLIFE RESOURCES



Bringing People and Pollinators Together

The monarch butterfly is in crisis, and MDC continues to work with partner organizations and the public to grow monarch habitat and draw attention to challenges faced by this iconic butterfly.

In recognition of National Pollinator Week, the Missouri Conservation Commission participated in a pollinator habitat planting ceremony at its June meeting in St. Louis. In Jefferson City, more than 1,400 people attended Monarch Mania at the Runge Conservation Nature Center. Monarch Mania, hosted by MDC and including more than a dozen conservation partners, was the second-largest event ever held at Runge. In addition,

MDC offered cost-share and incentive partnerships with USDA and USFWS to establish over 4,000 acres of monarch habitat, which benefits many other pollinators as well.

To support MDC's monarch efforts, staff at the George O. White State Nursery have been working with MDC's volunteer coordinators to grow milkweed for planting on state lands. The volunteer coordinators work with master naturalists to collect milkweed seeds, which are then planted at the nursery. This year, the effort generated about 48,000 plants.

BUTTERFLY NETTING: NOPPADOL PAOTHOONG;
PLANTING CEREMONY: DAV ZARENGA

Top Conservation Stories

2016-2017



Conservation Commission Names Sara Parker Pauley Director of the Missouri Department of Conservation

The Missouri Conservation Commission selected Sara Parker Pauley as MDC's ninth director, effective Nov. 1, 2016. She is the first female director in MDC's 80-year history.

"As a lifelong conservationist, hunter, and outdoorswoman, Sara Parker Pauley appreciates and understands the value of Missouri's fish, forest, and wildlife resources," said Conservation Commissioner Dave Murphy. "Sara has a breadth of experience and a proven track record of success to lead the department."



Sara Parker Pauley was sworn in as director on Nov. 1 by Missouri Supreme Court Judge Laura Denvir Stith. Next to Sara is her husband, Scott.

MDC Biologists Document Endangered Species

MDC biologists are documenting reproduction of the endangered grotto sculpin in Perry County caves. The grotto sculpin is a small cave fish that is only found in Perry County. It is also unique because the species seems to be currently evolving. They have varying levels of pigment, and some have eyes while others don't, as the species adapts to cave conditions. MDC has researched the rare fish for well over a decade, but the current research project is focused on assessing population numbers and status, which includes reproduction.

This is significant because nest sites of these endangered fish have not been documented before, said Jason Crites, MDC fisheries management biologist. In the past it was presumed grotto sculpin spawning occurred in winter months. This is the first time reproduction of these endangered fish is documented deep within the caves.



"Of all the places in the world, grotto sculpin are only known to live here in Perry County. This is very exciting as we learn more about these fish, what their needs are, and how we can protect them."

— Jason Crites, MDC fisheries management biologist



Conservation Commission Approves Changes to Smallmouth, Rock Bass Regulations

The Missouri Conservation Commission gave approval for regulation changes related to smallmouth bass and rock bass. The regulation created a standard 15-inch minimum length limit for smallmouth bass and a daily limit of one for all Smallmouth Bass Special Management areas. The regulation also set a statewide length limit of 7 inches for rock bass (also called goggle-eye, warmouth, Ozark bass, and shadow bass) and removed the Osage Fork of the Gasconade River from the Rock Bass Special Management areas. The regulation changes are based on extensive scientific research related to bass populations and harvest and consideration of public input received during nine public meetings held by MDC.



MDC and CFM Thank Deer Hunters for Sharing the Harvest

MDC and the Conservation Federation of Missouri (CFM) thank the 4,280 Missouri deer hunters who donated 198,277 pounds of venison to the state's Share the Harvest program during the 2016–2017 deer season. The donated deer meat helped feed hungry Missourians all around the state. Share the Harvest is coordinated by MDC and CFM. Deer hunters donate their extra venison to participating meat processors throughout the state, who grind the deer meat into one-pound packages. The packaged venison is then given to food banks and pantries for distribution to Missourians in need of food assistance.

Special Events Celebrate Great Missouri Birding Trail

MDC and the Missouri Bird Conservation Foundation invited birders and others interested in birds to special events in May celebrating the completion of the Great Missouri Birding Trail. The Great Missouri Birding Trail is not a physical trail, but a website, greatmissouribirdingtrail.com, for beginner and seasoned birders to find and explore the “best of the best” places to bird-watch around Missouri. The website includes an interactive map of the best birding sites across the Show-Me State with information on various aspects of bird conservation. Pages include birding tips, beginner basics, landscaping, and property improvements for birds, and how to get involved with local bird organizations.



MDC Works on Flood-Damaged River Accesses

MDC continued evaluating and repairing river and stream accesses damaged by 2017 spring flooding. Most flood damage occurred to MDC accesses in the Ozarks on the Current River, North Fork of the White River, and the Gasconade River. Most accesses were reported repaired by the end of the summer, but some remained closed due to extensive damage.

Spring flooding damaged the Patrick Bridge Access at Althea Spring and the North Fork of the White River.



Get Outside

in JANUARY

→ Ways to connect with nature

1 OFF WITH THE OLD

Go shed hunting! White-tailed bucks shed their antlers this time of year, so head out to the woods and you might find a trophy.



2 COUNT HAWKS ON THE HIGHWAY

Look for **red-tailed hawks** along the highway. They like to perch along the roadside this time of year, keeping an eye out for dinner. How many can you spot?



SOUTHEAST REGION

3 Fishing Skills: Youth Trout Fishing

Saturday, Jan. 20 • 10 a.m.-noon
Cape Girardeau Conservation Nature Center
2289 County Park Drive, Cape Girardeau, MO 63701
Registration required, call 573-290-5218 by Jan. 20
Ages 7-15

Join us to discover nature as we catch and release rainbow trout. The clinic will begin with a discussion of how the types of bait and tackle differ from the common fishing pole setup, as well as regulations and locations to fish for trout. Then we will travel to Rotary Lake to give everyone a chance to experience catching and releasing trout. Parent or guardian must attend. All equipment will be provided.



Natural Events to See This Month

Here's what's going on in the natural world.



Horned larks flock in open fields



Long-tailed weasels in north Missouri may turn **white** or **pale brown**



4

NORTHEAST REGION

Clarksville Eagle Days

Saturday, Jan. 27 • 9 a.m. to 4 p.m.
and Sunday, Jan. 28 • 10 a.m. to 3 p.m.

Lock and Dam 24, The Apple Shed, and River Front City Park
in Clarksville.

No registration required. Call
660-785-2420 for more information.

All ages, families

Missouri's winter eagle
watching is spectacular!
Join us in Clarksville to
view our national symbol in
the wild. Bring winter outdoor
clothing, camera, and
binoculars (optional),
family, and friends.



Gray squirrel

5

OH, BABY! Fox and gray squirrels
are having babies. You may catch a
glimpse of these bundles of furry joy
in their nests high in the treetops.

6

TAKE COVER

Recycle your
Christmas tree.
Anchor it in a
pond and provide
habitat for fish,
or put it beside
a birdfeeder
and make cover
for wildlife.



7

SIGNS OF SPRING

Watercress
greens around
springs and Ozark witch
hazel begins blooming after a few
days of warm weather. Can you find
these early indicators of spring?



Ozark
witch hazel

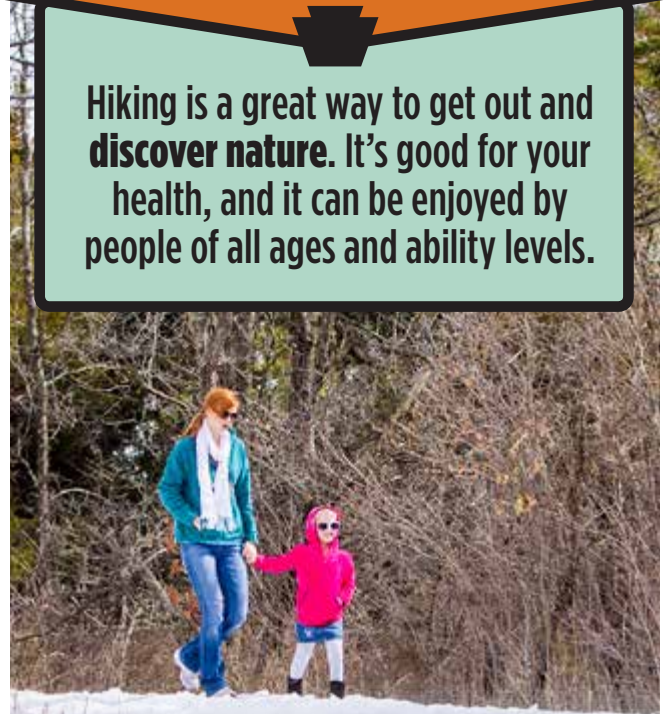


Watch for
mourning cloak
or comma
butterflies on
warm days



HIKED IT... LIKED IT!

Hiking is a great way to get out and
discover nature. It's good for your
health, and it can be enjoyed by
people of all ages and ability levels.



HOW TO PREPARE:

- Wear comfortable shoes
- Plan to layer your clothing
- Pack water and a light snack

BRING:

- Camera and binoculars
- Guides to identify birds, tracks, and wildflowers
- Family and friends

For more information
and to find a trail near you,
visit mdc.mo.gov



Serving nature and you®

Places to Go

CENTRAL REGION

Franklin Island Conservation Area

When an island isn't an island
by Larry Archer

✕ “No man is an island,” said poet John Donne. Nor, despite its name, is Franklin Island Conservation Area (CA).

It was an island once, cut off from the rest of Howard County by a channel of the Missouri River, but flood-control levees constructed in the 1950s closed the channel, reunited this area with the mainland, and turned its name into a misnomer.

While the river no longer contributes to the area's island status, it and a tributary, Bonne Femme Creek, still influence the 1,625-acre area's character and usage, according to Franklin Island CA Manager Steven Noll.

“I would say our greatest public attraction and use is probably the boat ramp on the Missouri River,” Noll said. “Fishing access on Bonne Femme Creek is also very popular.”

The area is an opportunistic wetland, relying exclusively on river flooding to determine water levels. When the area's cells are flooded, it tends to draw migrating waterfowl, and with them, bald eagles.

Located less than two miles downstream from Boonville, the boat ramp offers a view of the town's iconic railroad bridge, and, on a quiet Sunday morning, one might even hear local church bells toll.

“It's kind of a unique habitat in the Missouri River floodplain. We've got about 300–400 acres of bottomland hardwoods that are attractive to Neotropical migrants. It is essentially an island of habitat in the floodplain.”

—Franklin Island CA Manager Steven Noll



WHAT
TO
LOOK
FOR
WHEN
YOU
VISIT



Dark-eyed junco



The U.S. Highway 40 and Missouri-Kansas-Texas Railroad bridges, visible from the boat ramp at Franklin Island CA, cross the Missouri River at Boonville upstream from the conservation area. The boat ramp is one of the area's most frequently used features.



FRANKLIN ISLAND CONSERVATION AREA

consists of 1,625 acres in Howard County.
From Boonville, take Highway 40 east 3 miles
to County Road 465.

N39° 0' 12.0301" | W92° 43' 0.43"

short.mdc.mo.gov/Z5R 573-815-7900

WHAT TO DO WHEN YOU VISIT



Bird Watching Included in the National Audubon Society's Manitou Floodplain Important Bird Area. The eBird list of birds recorded at Franklin Island CA is available at short.mdc.mo.gov/Z5z.



Camping Individual campsites, but no amenities are provided.



Fishing Bass (fair), catfish (good), crappie (fair), sunfish (fair), other – drum, carp, and buffalo – (good).



Hiking No designated trails, but much of the area is accessible via levees.



Hunting

Deer (good) and **turkey** (good). Deer and turkey regulations are subject to annual changes. Please refer to the *Spring Turkey* or *Fall Deer and Turkey Hunting Regulations and Information* booklets for current regulations.

Dove (good). Dove hunting depends on the quality of dove fields; dove numbers decrease dramatically after the first few days of the season.

Quail (fair).

Waterfowl (good). The area's wetlands are flood dependent on the Missouri River and Bonne Femme Creek. Waterfowl regulations are subject to annual changes, so refer to the *Waterfowl Hunting Digest* for current regulations.



Trapping Special use permit required.



White-tailed deer



Beaver



Eastern meadowlark

Wild Guide



White-Tailed Deer

Odocoileus virginianus

Status

Common

Size

Length: 2.5–8 feet; weight: 90–311 pounds

Distribution

Statewide



Did You Know?

Deer were essential to Native Americans and early settlers, providing food, hides, sinews for bowstrings, bones for tools, and much more.

White-tailed deer are such a sight to behold. When you come across a majestic buck or a doe with a fawn at her side, you can't help but stop and marvel at the spectacle. Once you spot a deer, you may just get to see the white undersurface of its flaglike tail as it bounds for cover in the nearby woods, but it's still an experience like no other. In Missouri, we are fortunate to have a thriving deer population.



LIFE CYCLE

The peak of the mating season is November, and most young are born in late May or early June. A doe usually has twins, each weighing 4–7 pounds. The young accompany the female until they are old enough to breed. About half of the young females in Missouri breed the year of their birth, while others breed at 1½ years of age. Deer are in the prime of life between 2½ and 7½ years. Deer can live for 15 years in the wild.



FOODS

Deer are browsing animals, eating the leaves, twigs, and fruits of trees and shrubs, and the foliage of soft-stemmed plants. They also take seeds, fungi, mosses, lichens, succulent grasses, farm crops, and sometimes small amounts of animal food, like snails and fish.



ECOSYSTEM CONNECTIONS

As deer nip off buds and branches, they encourage denser growth on those plants.

NOPPADOL PAOTHONG

Outdoor Calendar

✱ MISSOURI DEPARTMENT OF CONSERVATION ✱



Free MO Hunting and MO Fishing Apps

MO Hunting makes it easy to buy permits, electronically notch them, and Telecheck your harvest.

MO Fishing lets you buy permits, find great places to fish, and ID your catch.

Get both in Android or iPhone platforms at short.mdc.mo.gov/Zi2.

FISHING

Black Bass

Impounded waters and most streams north of the Missouri River:
Open all year

Most streams south of the Missouri River:
May 27, 2017–Feb. 28, 2018

Nongame Fish Gigging

Streams and Impounded Waters,
sunrise to midnight:
Sept. 15, 2017–Jan. 31, 2018

Trout Parks

Catch-and-Release:
Nov. 10, 2017–Feb. 12, 2018

TRAPPING

Beaver, Nutria

Nov. 15, 2017–March 31, 2018

Other Furbearers

Nov. 15, 2017–Jan. 31, 2018

Otters, Muskrats

Nov. 15, 2017–Feb. 20, 2018

Rabbits

Nov. 15, 2017–Jan. 31, 2018

HUNTING

Coyote

Restrictions apply during April, spring turkey season, and firearms deer season.

Open all year

Crow

Nov. 1, 2017–March 3, 2018

Deer

Archery:
Nov. 22, 2017–Jan. 15, 2018

Firearms:
► Alternative Methods Portion:
Dec. 23, 2017–Jan. 2, 2018

Other Furbearers

Nov. 15, 2017–Jan. 31, 2018

Pheasant

Regular:
Nov. 1, 2017–Jan. 15, 2018

Quail

Regular:
Nov. 1, 2017–Jan. 15, 2018

Rabbit

Oct. 1, 2017–Feb. 15, 2018

Squirrel

May 27, 2017–Feb. 15, 2018

Turkey

Archery:
Nov. 22, 2017–Jan. 15, 2018

Waterfowl

See the Waterfowl Hunting Digest or visit short.mdc.mo.gov/ZZx for more information.



For complete information about seasons, limits, methods, and restrictions, consult the *Wildlife Code of Missouri* at short.mdc.mo.gov/Zib. Current hunting, trapping, and fishing regulation booklets are available from local permit vendors or online at short.mdc.mo.gov/ZZf.

ILLUSTRATIONS: MARK RATHIEL



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Discover nature during the cold winter months in your own backyard. Missouri is home to many species of overwintering birds, like this black-capped chickadee, that flock to backyard feeders in search of food. Are you ready for these fine-feathered visitors?

📷 by **Noppadol Paothong**

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